SEQUENCE LISTING

<110> TOVEY, Michael

<120> TRANSCRIPTIONAL REGULATOR OF GENES INVOLVED IN THE CONTROL OF CELL GROWTH OR CELL PROLIFERATION. USE OF SAID REGULATOR AS A THERAPEUTIC OR DIAGNOSTIC AGENT.

<130> 2121-0179P

<140> US 10/727,569
<141> 2003-12-05

<150> PCT/EP02/07064
<151> 2002-06-06

<150> EP01401476.5
<151> 2001-06-07

<160> 48

<170> PatentIn Ver. 2.1

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             20                  25                  30

Lys Ser Glu Pro Arg Arg Ile Lys Ile Phe Asp Gly Gly Tyr Lys Ser
         35                  40                  45

Asn Glu Glu Tyr Val Tyr Ile Arg Gly Arg Gly Arg Gly Lys Tyr Ile
     50                  55                  60

Cys Glu Glu Cys Gly Ile Arg Cys Lys Lys Pro Ser Met Leu Lys Lys
 65                  70                  75                  80

His Ile Arg Thr His Thr Asp Val Arg Pro Tyr His Cys Thr Tyr Cys
                 85                  90                  95

Asn Phe Ser Phe Lys Thr Lys Gly Asn Leu Thr Lys His Met Lys Ser
            100                 105                 110

Lys Ala His Ser Lys Lys Cys Val Asp Leu Gly Ile Ser Val Gly Leu
        115                 120                 125

Ile Asp Glu Gln Asp Thr Glu Glu Ser Asp Glu Lys Gln Arg Phe Ser
    130                 135                 140

Tyr Glu Arg Ser Gly Tyr Asp Leu Glu Glu Ser Asp Gly Pro Asp Glu
145                 150                 155                 160

Asp Asp Asn Glu Asn Glu Asp Asp Asp Glu Asp Ser Gln Ala Glu Ser
                165                 170                 175

Val Leu Ser Ala Thr Pro Ser Val Thr Ala Ser Pro Gln His Leu Pro
            180                 185                 190

Ser Arg Ser Ser Leu Gln Asp Pro Val Ser Thr Asp Glu Asp Val Arg
        195                 200                 205

Ile Thr Asp Cys Phe Ser Gly Val His Thr Asp Pro Met Asp Val Leu
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Pro Arg Ala Leu Leu Thr Arg Met Thr Val Leu Ser Thr Ala Gln Ser
225                 230                 235                 240

Asp Tyr Asn Arg Lys Thr Leu Ser Pro Gly Lys Ala Arg Gln Arg Ala
                245                 250                 255

Ala Arg Asp Glu Asn Asp Thr Ile Pro Ser Val Asp Thr Ser Arg Ser
            260                 265                 270

Pro Cys His Gln Met Ser Val Asp Tyr Pro Glu Ser Glu Glu Ile Leu
        275                 280                 285

Arg Ser Ser Met Ala Gly Lys Ala Val Ala Ile Thr Gln Ser Pro Ser
    290                 295                 300

Ser Val Arg Leu Pro Pro Ala Ala Ala Glu His Ser Pro Gln Thr Ala
305                 310                 315                 320

Ala Gly Met Pro Ser Val Ala Ser Pro His Pro Asp Pro Gln Glu Gln
                325                 330                 335

Lys Gln Gln Ile Thr Leu Gln Pro Thr Pro Gly Leu Pro Ser Pro His
            340                 345                 350

Thr His Leu Phe Ser His Leu Pro Leu His Ser Gln Gln Gln Ser Arg
        355                 360                 365

Thr Pro Tyr Asn Met Val Pro Val Gly Gly Ile His Val Val Pro Ala
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Gly Leu Thr Tyr Ser Thr Phe Val Pro Leu Gln Ala Gly Pro Val Gln
385                 390                 395                 400

Leu Thr Ile Pro Ala Val Ser Val Val His Arg Thr Leu Gly Thr His
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Arg Asn Thr Val Thr Glu Val Ser Gly Thr Thr Asn Pro Ala Gly Val
            420                 425                 430

Ala Glu Leu Ser Ser Val Val Pro Cys Ile Pro Ile Gly Gln Ile Arg
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Val Pro Gly Leu Gln Asn Leu Ser Thr Pro Gly Leu Gln Ser Leu Pro
    450                 455                 460

Ser Leu Ser Met Glu Thr Val Asn Ile Val Gly Leu Ala Asn Thr Asn
465                 470                 475                 480

Met Ala Pro Gln Val His Pro Pro Gly Leu Ala Leu Asn Ala Val Gly
                485                 490                 495

Leu Gln Val Leu Thr Ala Asn Pro Ser Ser Gln Ser Ser Pro Ala Pro
            500                 505                 510

Gln Ala His Ile Pro Gly Leu Gln Ile Leu Asn Ile Ala Leu Pro Thr
        515                 520                 525

Leu Ile Pro Ser Val Ser Gln Val Ala Val Asp Ala Gln Gly Ala Pro
    530                 535                 540

Glu Met Pro Ala Ser Gln Ser Lys Ala Cys Glu Thr Gln Pro Lys Gln
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Thr Ser Val Ala Ser Ala Asn Gln Val Ser Arg Thr Glu Ser Pro Gln
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Gly Leu Pro Thr Val Gln Arg Glu Asn Ala Lys Lys Val Leu Asn Pro
            580                 585                 590

Pro Ala Pro Ala Gly Asp His Ala Arg Leu Asp Gly Leu Ser Lys Met
        595                 600                 605

Asp Thr Glu Lys Ala Ala Ser Ala Asn His Val Lys Pro Lys Pro Glu
    610                 615                 620

Leu Thr Ser Ile Gln Gly Gln Pro Ala Ser Thr Ser Gln Pro Leu Leu
625                 630                 635                 640

Lys Ala His Ser Glu Val Phe Thr Lys Pro Ser Gly Gln Gln Thr Leu
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Ser Pro Asp Arg Gln Val Pro Arg Pro Thr Gly Leu Pro Arg Arg Gln
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Asn Phe Ser Phe Lys Thr Lys Gly Asn Leu Thr Lys His Met Lys Ser
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Lys Ala His
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Ala Glu Glu Ala Gly Ile Arg Cys Lys Lys Pro Ser Met Leu Lys Lys
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His Ile Arg Thr His Thr Asp Val Arg Pro Tyr His Cys Thr Tyr Cys
             20                  25                  30

Asn Phe Ser Phe Lys Thr Lys Gly Asn Leu Thr Lys His Met Lys Ser
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35 40 45

Lys Ala His
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<400> 37
Cys Glu Glu Cys Gly Ile Arg Cys Lys Lys Pro Ser Met Leu Lys Lys
1 5 10 15

His Ile Arg Thr His Thr Asp Val Arg Pro Tyr His Cys Thr Tyr Cys
20 25 30

Asn Phe Ser Phe Lys Thr Lys Gly Asn Leu Thr Lys Ala Met Lys Ser
35 40 45

Lys Ala
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             20                  25                  30

Lys Ser Glu Pro Arg Arg Ile Lys Ile Phe Asp Gly Gly Tyr Lys Ser
         35                  40                  45

Asn Glu Glu Tyr Val Tyr Val Arg Gly Arg Gly Gly Gly Lys Tyr Ile
     50                  55                  60

Cys Glu Glu Cys Gly Ile Arg Cys Lys Lys Pro Ser Met Leu Lys Lys
 65                  70                  75                  80

His Ile Arg Thr His Thr Asp Val Arg Pro Tyr His Cys Thr Tyr Cys
                 85                  90                  95

Asn Phe Ser Phe Lys Thr Lys Gly Asn Leu Thr Lys His Met Lys Ser
            100                 105                 110

Lys Ala His Ser Lys Lys Cys Val Asp Leu Gly Val Ser Val Gly Leu
        115                 120                 125

Ile Asp Glu Gln Asp Thr Glu Glu Ser Asp Glu Lys Gln Arg Phe Ser
    130                 135                 140

Tyr Glu Arg Ser Gly Tyr Asp Leu Glu Glu Ser Asp Gly Pro Asp Glu
145                 150                 155                 160

Asp Asp Asn Glu Asn Glu Asp Asp Asp Glu Asp Ser Gln Ala Glu Ser
                165                 170                 175

Val Leu Ser Ala Thr Pro Ser Val Thr Ala Ser Pro Gln His Leu Pro
            180                 185                 190

Ser Arg Ser Ser Leu Gln Asp Pro Val Ser Thr Asp Glu Asp Val Arg
        195                 200                 205

Ile Thr Asp Cys Phe Ser Gly Val His Thr Asp Pro Met Asp Val Leu
    210                 215                 220

Pro Arg Ala Leu Leu Thr Arg Met Thr Val Leu Ser Thr Ala Gln Ser
225                 230                 235                 240

Asp Tyr Asn Arg Lys Thr Leu Ser Pro Gly Lys Ala Arg Gln Arg Ala
                245                 250                 255

Ala Arg Asp Glu Asn Asp Thr Ile Pro Ser Val Asp Thr Ser Arg Ser
            260                 265                 270

Pro Cys His Gln Met Ser Val Asp Tyr Pro Glu Ser Glu Glu Ile Leu
        275                 280                 285

Arg Ser Ser Met Ala Gly Lys Ala Val Ala Ile Thr Gln Ser Pro Ser
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290 295 300

Ser Val Arg Leu Pro Pro Ala Ala Ala Glu His Ser Pro Gln Thr Ala
305 310 315 320

Ala Gly Met Pro Ser Val Ala Ser Pro His Pro Asp Pro Gln Glu Gln
325 330 335

Lys Gln Gln Ile Thr Leu Gln Pro Thr Pro Gly Leu Pro Ser Pro His
340 345 350

Thr His Leu Phe Ser His Leu Pro Leu His Ser Gln Gln Gln Ser Arg
355 360 365

Thr Pro Tyr Asn Met Val Pro Val Gly Gly Ile His Val Val Pro Ala
370 375 380

Gly Leu Thr Tyr Ser Thr Phe Val Pro Leu Gln Ala Gly Pro Val Gln
385 390 395 400

Leu Thr Ile Pro Ala Val Ser Val Val His Arg Thr Leu Gly Thr His
405 410 415

Arg Asn Thr Val Thr Glu Val Ser Gly Thr Thr Asn Pro Ala Gly Val
420 425 430

Ala Glu Leu Ser Ser Val Val Pro Cys Ile Pro Ile Gly Gln Ile Arg
435 440 445

Val Pro Gly Leu Gln Asn Leu Ser Thr Pro Gly Leu Gln Ser Leu Pro
450 455 460

Ser Leu Ser Met Glu Thr Val Asn Ile Val Gly Leu Ala Asn Thr Asn
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Met Ala Pro Gln Val His Pro Pro Gly Leu Ala Leu Asn Ala Val Gly
485 490 495

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Gln Ala His Ile Pro Gly Leu Gln Ile Leu Asn Ile Ala Leu Pro Thr
515 520 525

Leu Ile Pro Ser Val Ser Gln Val Ala Val Asp Ala Gln Gly Ala Pro
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Glu Met Pro Ala Ser Gln Ser Lys Ala Cys Glu Thr Gln Pro Lys Gln
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Thr Ser Val Ala Ser Ala Asn Gln Val Ser Arg Thr Glu Ser Pro Gln
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Gly Leu Pro Thr Val Gln Arg Glu Asn Ala Lys Lys Val Leu Asn Pro
580 585 590

Pro Ala Pro Ala Gly Asp His Ala Arg Leu Asp Gly Leu Ser Lys Met
595 600 605

Asp Thr Glu Lys Ala Ala Ser Ala Asn His Val Lys Pro Lys Pro Glu
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Leu Thr Ser Ile Gln Gly Gln Pro Ala Ser Thr Ser Gln Pro Leu Leu

625 630 635 640

Lys Ala His Ser Glu Val Phe Thr Lys Pro Ser Gly Gln Gln Thr Leu
645 650 655

Ser Pro Asp Arg Gln Val Pro Arg Pro Thr Ala Leu Pro Arg Arg Gln
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<222> (1)..(693)
<223> PRDII polypeptide

<400> 41
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1 5 10 15

Asp Ala Ser Glu Ile Asn Ser Glu Gln Asp Lys Glu Asn Ser Leu Ile
20 25 30

Lys Ser Glu Pro Arg Arg Ile Lys Ile Phe Asp Gly Gly Tyr Lys Ser
35 40 45

Asn Glu Glu Tyr Val Tyr Ile Arg Gly Arg Gly Arg Gly Lys Tyr Ile
50 55 60

Cys Glu Glu Cys Gly Ile Arg Cys Lys Lys Pro Ser Met Leu Lys Lys
65 70 75 80

His Ile Arg Thr His Thr Asp Val Arg Pro Tyr His Cys Thr Tyr Cys
85 90 95

Asn Phe Ser Phe Lys Thr Lys Gly Asn Leu Thr Lys His Met Lys Ser
100 105 110

Lys Ala His Ser Lys Lys Cys Val Asp Leu Gly Ile Ser Val Gly Leu
115 120 125

Ile Asp Glu Gln Asp Thr Glu Glu Ser Asp Glu Lys Gln Arg Phe Ser
130 135 140

Tyr Glu Arg Ser Gly Tyr Asp Leu Glu Glu Ser Asp Gly Pro Asp Glu
145 150 155 160

Asp Asp Asn Glu Asn Glu Asp Asp Asp Glu Asp Ser Gln Ala Glu Ser
165 170 175

Val Leu Ser Ala Thr Pro Ser Val Thr Ala Ser Pro Gln His Leu Pro
180 185 190

```
Ser Arg Ser Ser Leu Gln Asp Pro Val Ser Thr Asp Glu Asp Val Arg
        195                 200                 205

Ile Thr Asp Cys Phe Ser Gly Val His Thr Asp Pro Met Asp Val Leu
    210                 215                 220

Pro Arg Ala Leu Leu Thr Arg Met Thr Val Leu Ser Thr Ala Gln Ser
225                 230                 235                 240

Asp Tyr Asn Arg Lys Thr Leu Ser Pro Gly Lys Ala Arg Gln Arg Ala
                245                 250                 255

Ala Arg Asp Glu Asn Asp Thr Ile Pro Ser Val Asp Thr Ser Arg Ser
            260                 265                 270

Pro Cys His Gln Met Ser Val Asp Tyr Pro Glu Ser Glu Glu Ile Leu
        275                 280                 285

Arg Ser Ser Met Ala Gly Lys Ala Val Ala Ile Thr Gln Ser Pro Ser
    290                 295                 300

Ser Val Arg Leu Pro Pro Ala Ala Ala Glu His Ser Pro Gln Thr Ala
305                 310                 315                 320

Ala Gly Met Pro Ser Val Ala Ser Pro His Pro Asp Pro Gln Glu Gln
                325                 330                 335

Lys Gln Gln Ile Thr Leu Gln Pro Thr Pro Gly Leu Pro Ser Pro His
            340                 345                 350

Thr His Leu Phe Ser His Leu Pro Leu His Ser Gln Gln Gln Ser Arg
        355                 360                 365

Thr Pro Tyr Asn Met Val Pro Val Gly Gly Ile His Val Val Pro Ala
    370                 375                 380

Gly Leu Thr Tyr Ser Thr Phe Val Pro Leu Gln Ala Gly Pro Val Gln
385                 390                 395                 400

Leu Thr Ile Pro Ala Val Ser Val Val His Arg Thr Leu Gly Thr His
                405                 410                 415

Arg Asn Thr Val Thr Glu Val Ser Gly Thr Thr Asn Pro Ala Gly Val
            420                 425                 430

Ala Glu Leu Ser Ser Val Val Pro Cys Ile Pro Ile Gly Gln Ile Arg
        435                 440                 445

Val Pro Gly Leu Gln Asn Leu Ser Thr Pro Gly Leu Gln Ser Leu Pro
    450                 455                 460

Ser Leu Ser Met Glu Thr Val Asn Ile Val Gly Leu Ala Asn Thr Asn
465                 470                 475                 480

Met Ala Pro Gln Val His Pro Pro Gly Leu Ala Leu Asn Ala Val Gly
                485                 490                 495

Leu Gln Val Leu Thr Ala Asn Pro Ser Ser Gln Ser Ser Pro Ala Pro
            500                 505                 510

Gln Ala His Ile Pro Gly Leu Gln Ile Leu Asn Ile Ala Leu Pro Thr
        515                 520                 525
```

```
Leu Ile Pro Ser Val Ser Gln Val Ala Val Asp Ala Gln Gly Ala Pro
    530                 535                 540

Glu Met Pro Ala Ser Gln Ser Lys Ala Cys Glu Thr Gln Pro Lys Gln
545                 550                 555                 560

Thr Ser Val Ala Ser Ala Asn Gln Val Ser Arg Thr Glu Ser Pro Gln
                565                 570                 575

Gly Leu Pro Thr Val Gln Arg Glu Asn Ala Lys Lys Val Leu Asn Pro
            580                 585                 590

Pro Ala Pro Ala Gly Asp His Ala Arg Leu Asp Gly Leu Ser Lys Met
        595                 600                 605

Asp Thr Glu Lys Ala Ala Ser Ala Asn His Val Lys Pro Lys Pro Glu
    610                 615                 620

Leu Thr Ser Ile Gln Gly Gln Pro Ala Ser Thr Ser Gln Pro Leu Leu
625                 630                 635                 640

Lys Ala His Ser Glu Val Phe Thr Lys Pro Ser Gly Gln Gln Thr Leu
                645                 650                 655

Ser Pro Asp Arg Gln Val Pro Arg Pro Thr Gly Leu Pro Arg Arg Gln
            660                 665                 670

Pro Thr Val His Phe Ser Asp Val Ser Ser Asp Asp Asp Glu Asp Arg
        675                 680                 685

Leu Val Ile Ala Thr
    690
```

<210> 42
<211> 23
<212> PRT
<213> Homo sapiens

<400> 42
```
Met Gly Gln Lys Phe Gln Lys Lys Lys Ser Tyr Arg Leu Val Leu Lys
  1               5                  10                  15

Glu Leu Arg Asn Pro Leu Lys
            20
```

<210> 43
<211> 16
<212> PRT
<213> Homo sapiens

<400> 43
```
Lys Ser Tyr Arg Leu Val Leu Lys Glu Leu Arg Asn Pro Leu Lys Arg
  1               5                  10                  15
```

<210> 44
<211> 2648
<212> DNA

<213> Homo sapiens

<400> 44
atggggcaga agtttcaaaa aaagagagca ttaggtaatc aaaagtccac agtagttgaa 60
ttcagcaata aagatgcctc tgaaattaac agtgagcaag ataaagaaaa ttccttaatc 120
aaaagtgaac caagaagaat taaaatattt gatggaggat ataagtcaaa tgaagagtat 180
gtatatatcc gaggcagggg aagaggaaaa tacatttgtg aagaatgtgg aatacgttgt 240
aagaaaccta gcatgttaaa gaaacacata cgaacccata cagatgtccg cccctaccac 300
tgcacttact gtaacttctc ctttaagact aaaggaaatc tgacaaaaca catgaagtcc 360
aaggcacata gcaagaaatg tgtggattta ggcatctcag taggtttaat agatgaacag 420
gatacagaag aatcagatga aaaacagaga ttcagttatg agcgatctgg atatgatctt 480
gaagaatctg atggcccaga tgaggatgac aatgaaaatg aagacgatga tgaggacagc 540
caggctgaat cagtcctgtc agccacaccc tcagtcacag ctagcccgca gcaccttcca 600
tctagaagta gccttcagga ccctgtgagt actgacgagg atgtcaggat caccgattgc 660
ttttctgggg tacacacgga cccaatggac gttctgccca gggcgctgct caccagaatg 720
actgtcctga gcacagcaca gtctgactac aataggaaga cactctctcc ggggaaggcc 780
aggcagcgtg ctgcgagaga tgaaaacgac acaattccgt ctgtagacac ttccaggtcc 840
ccgtgtcatc agatgtctgt ggactaccct gagtcagaag aaattctgag aagttctatg 900
gcaggaaaag ctgttgctat aacacagagc ccatcatctg taagacttcc tcctgctgca 960
gctgagcaca gcccccagac agcagcgggg atgccttctg tggcctcacc acatcctgac 1020
cctcaagaac agaagcagca aataactcta cagccgactc caggcttgcc ttctccccac 1080
actcatttgt ttagccacct tcctttgcat tcccagcagc aatcgaggac accttataat 1140
atggttccag ttgggggggat ccatgtggta cctgctggcc tcacatactc cacgtttgtg 1200
ccccttcagg ctggaccagt gcagctcacg atccctgctg tcagtgtcgt tcacagaact 1260
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gctgaattaa gcagtgttgt gccatgtatt cctatcggcc aaatccgcgt gccaggcctt 1380
cagaacctaa gtaccccagg cttgcagtca ctcccctcgt taagcatgga aaccgtcaat 1440
attgtaggcc tagccaatac aaatatggcc ccacaagtcc atccaccagg actggctctg 1500
aatgctgtcg gactgcaggt tctgactgca aacccttcat cacaaagcag ccccgccccc 1560
caggcacaca ttccaggtct ccagatcttg aacatagcat tgcccacctt aatcccctca 1620
gtcagtcaag tagccgttga tgcacaggga gctccagaaa tgccagcttc ccaaagcaaa 1680
gcatgcgaga cacaacccaa gcagacttct gtagccagcg caaaccaggt cagcaggacc 1740
gagtctcctc aggggttacc tacagtccag cgggaaaatg caaaaaaagt tctgaatcca 1800
cctgcccctg caggtgacca tgcaaggctt gatggcctga gtaaaatgga cacagagaag 1860
gctgcctcgg caaatcacgt gaagcccaag cctgaactca cttccataca gggccaacca 1920
gcgtccacgt cacaacctct gctgaaggca cattctgaag tttttacaaa gccctcaggc 1980
cagcagactc tctctccaga cagacaggtt cccaggccca caggactacc gcggaggcag 2040
cccactgtgc acttcagcga cgtgagcagc gatgatgacg aggacaggct tgtgatagca 2100
acctgatgga ttttatttt tatttgcttt ttttttatat aacacttaaa ggtttctttg 2160
aaaaccctcc tttccttaaa gcacattttt ctgacataaa ctcatgacta atctttgtgc 2220
aatcatgaac ttttgaccaa taattgttgt tttgtgtcag ctccagccat ttttgtacat 2280
gttgtataga caattgtgcc ttttaggagc tttatgttta gaaactgtac agattgttga 2340
atatctatat acataaaaat atattatata tgtatatgaa aaccaggtag ttatttgtgt 2400
ttagtaagga aaacctgtca aataaatcaa atgattaaat tatatgttcc actgttgaat 2460
ataaatttta tggctatggg gcagagtttc tgtgtataaa ttagtatgta aactccatat 2520
ttatgtattc atattagtct ttgaaaatgg gtctgtcctc cttgtgtaag acagtaactt 2580
tacacttcag acagattttc tgtgttatga aatgtttcag taaaatattg tttactgacc 2640
tttaaaaa 2648

<210> 45
<211> 2151
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> Complement((1)..(2151))
<223> GAAP-2 coding sequence

<400> 45
atggggcaga agtttcaaaa aaagaaatct tacaggctgg tgttaaagga acttcggaat 60
cccttaaaga gagcattagg taatcaaaag tccacagtag ttgaattcag caataaagat 120

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gcctctgaaa ttaacagtga gcaagataaa gaaaattcct taatcaaaag tgaaccaaga 180
agaattaaaa tatttgatgg aggatataag tcaaatgaag agtatgtata tatccgaggc 240
aggggaagag gaaaatacat ttgtgaagaa tgtggaatac gttgtaagaa acctagcatg 300
ttaaagaaac acatacgaac ccatacagat gtccgcccct accactgcac ttactgtaac 360
ttctccttta agactaaagg aaatctgaca aaacacatga agtccaaggc acatagcaag 420
aaatgtgtgg atttaggcat ctcagtaggt ttaatagatg aacaggatac agaagaatca 480
gatgaaaaac agagattcag ttatgagcga tctggatatg atcttgaaga atctgatggc 540
ccagatgagg atgacaatga aaatgaagac gatgatgagg acagccaggc tgaatcagtc 600
ctgtcagcca caccctcagt cacagctagc ccgcagcacc ttccatctag aagtagcctt 660
caggaccctg tgagtactga cgaggatgtc aggatcaccg attgcttttc tggggtacac 720
acggacccaa tggacgttct gcccagggcg ctgctcacca gaatgactgt cctgagcaca 780
gcacagtctg actacaatag gaagacactc tctccgggga aggccaggca gcgtgctgcg 840
agagatgaaa acgacacaat tccgtctgta gacacttcca ggtccccgtg tcatcagatg 900
tctgtggact accctgagtc agaagaaatt ctgagaagtt ctatggcagg aaaagctgtt 960
gctataacac agagcccatc atctgtaaga cttcctcctg ctgcagctga gcacagcccc 1020
cagacagcag cggggatgcc ttctgtggcc tcaccacatc ctgaccctca agaacagaag 1080
cagcaaataa ctctacagcc gactccaggc ttgccttctc cccacactca tttgtttagc 1140
caccttcctt tgcattccca gcagcaatcg aggacacctt ataatatggt tccagttggg 1200
gggatccatg tggtacctgc tggcctcaca tactccacgt ttgtgcccct tcaggctgga 1260
ccagtgcagc tcacgatccc tgctgtcagt gtcgttcaca gaactttggg tactcatagg 1320
aatacggtca cagaagtgtc tggcactaca aaccctgctg gagtggctga attaagcagt 1380
gttgtgccat gtattcctat cggccaaatc cgcgtgccag gccttcagaa cctaagtacc 1440
ccaggcttgc agtcactccc ctcgttaagc atggaaaccg tcaatattgt aggcctagcc 1500
aatacaaata tggccccaca agtccatcca ccaggactgg ctctgaatgc tgtcggactg 1560
caggttctga ctgcaaaccc ttcatcacaa agcagccccg cccctcaggc acacattcca 1620
ggtctccaga tcttgaacat agcattgccc accttaatcc cctcagtcag tcaagtagcc 1680
gttgatgcac agggagctcc agaaatgcca gcttcccaaa gcaaagcatg cgagacacaa 1740
cccaagcaga cttctgtagc cagcgcaaac caggtcagca ggaccgagtc tcctcagggg 1800
ttacctacag tccagcggga aaatgcaaaa aaagttctga atccacctgc ccctgcaggt 1860
gaccatgcaa ggcttgatgg cctgagtaaa atggacacag agaaggctgc ctcggcaaat 1920
cacgtgaagc ccaagcctga actcacttcc atacagggcc aaccagcgtc cacgtcacaa 1980
cctctgctga aggcacattc tgaagttttt acaaagccct caggccagca gactctctct 2040
ccagacagac aggttcccag gcccacagga ctaccgcgga ggcagcccac tgtgcacttc 2100
agcgacgtga gcagcgatga tgacgaggac aggcttgtga tagcaacctg a          2151
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<210> 46
<211> 701
<212> PRT
<213> Homo sapiens

<400> 46

```
Met Gly Gln Lys Phe Gln Lys Lys Arg Ala Leu Gly Asn Gln Lys Ser
  1               5                  10                  15

Thr Val Val Glu Phe Ser Asn Lys Asp Ala Ser Glu Ile Asn Ser Glu
             20                  25                  30

Gln Asp Lys Glu Asn Ser Leu Ile Lys Ser Glu Pro Arg Arg Ile Lys
         35                  40                  45

Ile Phe Asp Gly Gly Tyr Lys Ser Asn Glu Glu Tyr Val Tyr Ile Arg
     50                  55                  60

Gly Arg Gly Arg Gly Lys Tyr Ile Cys Glu Glu Cys Gly Ile Arg Cys
 65                  70                  75                  80

Lys Lys Pro Ser Met Leu Lys Lys His Ile Arg Thr His Thr Asp Val
                 85                  90                  95

Arg Pro Tyr His Cys Thr Tyr Cys Asn Phe Ser Phe Lys Thr Lys Gly
            100                 105                 110
```

```
Asn Leu Thr Lys His Met Lys Ser Lys Ala His Ser Lys Lys Cys Val
        115                 120                 125

Asp Leu Gly Ile Ser Val Gly Leu Ile Asp Glu Gln Asp Thr Glu Glu
    130                 135                 140

Ser Asp Glu Lys Gln Arg Phe Ser Tyr Glu Arg Ser Gly Tyr Asp Leu
145                 150                 155                 160

Glu Glu Ser Asp Gly Pro Asp Glu Asp Asp Asn Glu Asn Glu Asp Asp
                165                 170                 175

Asp Glu Asp Ser Gln Ala Glu Ser Val Leu Ser Ala Thr Pro Ser Val
            180                 185                 190

Thr Ala Ser Pro Gln His Leu Pro Ser Arg Ser Ser Leu Gln Asp Pro
        195                 200                 205

Val Ser Thr Asp Glu Asp Val Arg Ile Thr Asp Cys Phe Ser Gly Val
    210                 215                 220

His Thr Asp Pro Met Asp Val Leu Pro Arg Ala Leu Leu Thr Arg Met
225                 230                 235                 240

Thr Val Leu Ser Thr Ala Gln Ser Asp Tyr Asn Arg Lys Thr Leu Ser
                245                 250                 255

Pro Gly Lys Ala Arg Gln Arg Ala Ala Arg Asp Glu Asn Asp Thr Ile
            260                 265                 270

Pro Ser Val Asp Thr Ser Arg Ser Pro Cys His Gln Met Ser Val Asp
        275                 280                 285

Tyr Pro Glu Ser Glu Glu Ile Leu Arg Ser Ser Met Ala Gly Lys Ala
    290                 295                 300

Val Ala Ile Thr Gln Ser Pro Ser Ser Val Arg Leu Pro Pro Ala Ala
305                 310                 315                 320

Ala Glu His Ser Pro Gln Thr Ala Ala Gly Met Pro Ser Val Ala Ser
                325                 330                 335

Pro His Pro Asp Pro Gln Glu Gln Lys Gln Gln Ile Thr Leu Gln Pro
            340                 345                 350

Thr Pro Gly Leu Pro Ser Pro His Thr His Leu Phe Ser His Leu Pro
        355                 360                 365

Leu His Ser Gln Gln Gln Ser Arg Thr Pro Tyr Asn Met Val Pro Val
    370                 375                 380

Gly Gly Ile His Val Val Pro Ala Gly Leu Thr Tyr Ser Thr Phe Val
385                 390                 395                 400

Pro Leu Gln Ala Gly Pro Val Gln Leu Thr Ile Pro Ala Val Ser Val
                405                 410                 415

Val His Arg Thr Leu Gly Thr His Arg Asn Thr Val Thr Glu Val Ser
            420                 425                 430

Gly Thr Thr Asn Pro Ala Gly Val Ala Glu Leu Ser Ser Val Val Pro
        435                 440                 445
```

```
Cys Ile Pro Ile Gly Gln Ile Arg Val Pro Gly Leu Gln Asn Leu Ser
    450                 455                 460

Thr Pro Gly Leu Gln Ser Leu Pro Ser Leu Ser Met Glu Thr Val Asn
465                 470                 475                 480

Ile Val Gly Leu Ala Asn Thr Asn Met Ala Pro Gln Val His Pro Pro
                485                 490                 495

Gly Leu Ala Leu Asn Ala Val Gly Leu Gln Val Leu Thr Ala Asn Pro
            500                 505                 510

Ser Ser Gln Ser Ser Pro Ala Pro Gln Ala His Ile Pro Gly Leu Gln
        515                 520                 525

Ile Leu Asn Ile Ala Leu Pro Thr Leu Ile Pro Ser Val Ser Gln Val
    530                 535                 540

Ala Val Asp Ala Gln Gly Ala Pro Glu Met Pro Ala Ser Gln Ser Lys
545                 550                 555                 560

Ala Cys Glu Thr Gln Pro Lys Gln Thr Ser Val Ala Ser Ala Asn Gln
                565                 570                 575

Val Ser Arg Thr Glu Ser Pro Gln Gly Leu Pro Thr Val Gln Arg Glu
            580                 585                 590

Asn Ala Lys Lys Val Leu Asn Pro Pro Ala Pro Ala Gly Asp His Ala
        595                 600                 605

Arg Leu Asp Gly Leu Ser Lys Met Asp Thr Glu Lys Ala Ala Ser Ala
    610                 615                 620

Asn His Val Lys Pro Lys Pro Glu Leu Thr Ser Ile Gln Gly Gln Pro
625                 630                 635                 640

Ala Ser Thr Ser Gln Pro Leu Leu Lys Ala His Ser Glu Val Phe Thr
                645                 650                 655

Lys Pro Ser Gly Gln Gln Thr Leu Ser Pro Asp Arg Gln Val Pro Arg
            660                 665                 670

Pro Thr Gly Leu Pro Arg Arg Gln Pro Thr Val His Phe Ser Asp Val
        675                 680                 685

Ser Ser Asp Asp Asp Glu Asp Arg Leu Val Ile Ala Thr
    690                 695                 700



<210> 47
<211> 716
<212> PRT
<213> Homo sapiens

<400> 47
Met Gly Gln Lys Phe Gln Lys Lys Lys Ser Tyr Arg Leu Val Leu Lys
  1               5                  10                  15

Glu Leu Arg Asn Pro Leu Lys Arg Ala Leu Gly Asn Gln Lys Ser Thr
             20                  25                  30

Val Val Glu Phe Ser Asn Lys Asp Ala Ser Glu Ile Asn Ser Glu Gln
```

```
         35                  40                  45

Asp Lys Glu Asn Ser Leu Ile Lys Ser Glu Pro Arg Arg Ile Lys Ile
     50                  55                  60

Phe Asp Gly Gly Tyr Lys Ser Asn Glu Glu Tyr Val Tyr Ile Arg Gly
 65                  70                  75                  80

Arg Gly Arg Gly Lys Tyr Ile Cys Glu Glu Cys Gly Ile Arg Cys Lys
                 85                  90                  95

Lys Pro Ser Met Leu Lys Lys His Ile Arg Thr His Thr Asp Val Arg
            100                 105                 110

Pro Tyr His Cys Thr Tyr Cys Asn Phe Ser Phe Lys Thr Lys Gly Asn
        115                 120                 125

Leu Thr Lys His Met Lys Ser Lys Ala His Ser Lys Lys Cys Val Asp
    130                 135                 140

Leu Gly Ile Ser Val Gly Leu Ile Asp Glu Gln Asp Thr Glu Glu Ser
145                 150                 155                 160

Asp Glu Lys Gln Arg Phe Ser Tyr Glu Arg Ser Gly Tyr Asp Leu Glu
                165                 170                 175

Glu Ser Asp Gly Pro Asp Glu Asp Asp Asn Glu Asn Glu Asp Asp Asp
            180                 185                 190

Glu Asp Ser Gln Ala Glu Ser Val Leu Ser Ala Thr Pro Ser Val Thr
        195                 200                 205

Ala Ser Pro Gln His Leu Pro Ser Arg Ser Ser Leu Gln Asp Pro Val
    210                 215                 220

Ser Thr Asp Glu Asp Val Arg Ile Thr Asp Cys Phe Ser Gly Val His
225                 230                 235                 240

Thr Asp Pro Met Asp Val Leu Pro Arg Ala Leu Leu Thr Arg Met Thr
                245                 250                 255

Val Leu Ser Thr Ala Gln Ser Asp Tyr Asn Arg Lys Thr Leu Ser Pro
            260                 265                 270

Gly Lys Ala Arg Gln Arg Ala Ala Arg Asp Glu Asn Asp Thr Ile Pro
        275                 280                 285

Ser Val Asp Thr Ser Arg Ser Pro Cys His Gln Met Ser Val Asp Tyr
    290                 295                 300

Pro Glu Ser Glu Glu Ile Leu Arg Ser Ser Met Ala Gly Lys Ala Val
305                 310                 315                 320

Ala Ile Thr Gln Ser Pro Ser Ser Val Arg Leu Pro Pro Ala Ala Ala
                325                 330                 335

Glu His Ser Pro Gln Thr Ala Ala Gly Met Pro Ser Val Ala Ser Pro
            340                 345                 350

His Pro Asp Pro Gln Glu Gln Lys Gln Gln Ile Thr Leu Gln Pro Thr
        355                 360                 365

Pro Gly Leu Pro Ser Pro His Thr His Leu Phe Ser His Leu Pro Leu
```

370 375 380

His Ser Gln Gln Gln Ser Arg Thr Pro Tyr Asn Met Val Pro Val Gly
385 390 395 400

Gly Ile His Val Val Pro Ala Gly Leu Thr Tyr Ser Thr Phe Val Pro
405 410 415

Leu Gln Ala Gly Pro Val Gln Leu Thr Ile Pro Ala Val Ser Val Val
420 425 430

His Arg Thr Leu Gly Thr His Arg Asn Thr Val Thr Glu Val Ser Gly
435 440 445

Thr Thr Asn Pro Ala Gly Val Ala Glu Leu Ser Ser Val Val Pro Cys
450 455 460

Ile Pro Ile Gly Gln Ile Arg Val Pro Gly Leu Gln Asn Leu Ser Thr
465 470 475 480

Pro Gly Leu Gln Ser Leu Pro Ser Leu Ser Met Glu Thr Val Asn Ile
485 490 495

Val Gly Leu Ala Asn Thr Asn Met Ala Pro Gln Val His Pro Pro Gly
500 505 510

Leu Ala Leu Asn Ala Val Gly Leu Gln Val Leu Thr Ala Asn Pro Ser
515 520 525

Ser Gln Ser Ser Pro Ala Pro Gln Ala His Ile Pro Gly Leu Gln Ile
530 535 540

Leu Asn Ile Ala Leu Pro Thr Leu Ile Pro Ser Val Ser Gln Val Ala
545 550 555 560

Val Asp Ala Gln Gly Ala Pro Glu Met Pro Ala Ser Gln Ser Lys Ala
565 570 575

Cys Glu Thr Gln Pro Lys Gln Thr Ser Val Ala Ser Ala Asn Gln Val
580 585 590

Ser Arg Thr Glu Ser Pro Gln Gly Leu Pro Thr Val Gln Arg Glu Asn
595 600 605

Ala Lys Lys Val Leu Asn Pro Pro Ala Pro Ala Gly Asp His Ala Arg
610 615 620

Leu Asp Gly Leu Ser Lys Met Asp Thr Glu Lys Ala Ala Ser Ala Asn
625 630 635 640

His Val Lys Pro Lys Pro Glu Leu Thr Ser Ile Gln Gly Gln Pro Ala
645 650 655

Ser Thr Ser Gln Pro Leu Leu Lys Ala His Ser Glu Val Phe Thr Lys
660 665 670

Pro Ser Gly Gln Gln Thr Leu Ser Pro Asp Arg Gln Val Pro Arg Pro
675 680 685

Thr Gly Leu Pro Arg Arg Gln Pro Thr Val His Phe Ser Asp Val Ser
690 695 700

Ser Asp Asp Asp Glu Asp Arg Leu Val Ile Ala Thr

705 710 715

<210> 48
<211> 14
<212> DNA
<213> Homo sapiens

<400> 48
aaaacgattt ccac 14